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The Emergence of Competence in the Breakdown of Goal-Directed Education

Part I: Thirst for Learning – A Myth

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Preface

This topic is dealt with in two separate articles. The first is a kind of perspective paper, which introduces a series of articles within the current and burning area of *competence* and *competence development.* The second is an empirical testing of the way in which I believe competence will be described and measured in the future. My position is that competence can be equated with *synthesis.* For this reason, we can only get hold of it through a person's speech or writing. Synthesis comes about in the moment of production and can only be studied a posteriori (B. Bierschenk, 1995). A similar idea is put forward by the Swedish association of academics, SACO (1998). In a policy report, SACO refers to a researcher in administration, Otto Granberg, who concludes: "Competence does not show up until it has been proved".

The education in schools and elsewhere is facing great changes in these days. It is especially interesting, since we are rapidly approaching a century and even a millennium shift. The alterations within the area of education seem to be connected to new conceptions ofknowledge, which is a result of new techniques, making it possible to communicate all over the world, quickly and effectively. The rising generations of students have taken the computer to their hearts (or have to do so sooner or later) just like earlier generations used the paper and pencil to communicate with others. Modern times almost always generate novel patterns of communication and our time is undoubtedly marked by the electronic modernism.

By the development going on around us, which I just touch upon, I feel as if we are crossing the threshold of a new era. Within certain circles it is called the ITera, and why not, if they mean that the technique requires novel ways of attacking the education efforts both in the public and the private sector. Competence development has become the key word, which provides companies as well as organisations with a lift into modern thinking around the production of goods, services, and knowledge. However, in order for novel ideas to come about, there is often a need for novel methods and models.

Anders Leion (1992) discusses competence development in Swedish trade and industry, for example with the Civil Service Department ("machine"), the Worksl Factory, the Engineering Firm, and the Knowledge Company ("enterprising") as models. The machinemodel (my analogy) , which is top governed, rules the entire school system. "The teachers, the ones who have produced the instruction, have had small chances to influence the organisation" (p 41). The other extreme is the Knowledge Company, where the staff daily learns new things and adapts to changes. A prerequisite is, according to the author, an almost flat organisation (see also Wikfeldt, 1990). The Swedish Employer's Confederation (SAF) is pursuing an innovating work on learning in organisations. Its policy rests in principle on the opinion that education today is to a great extent out of time (SAF, 1998). Thus SAF would like to see the teacher training be organised like an apprentice system.

I will not discuss the organisational changes, which will followas a result of technical progress. But the out of time - condition perceived by SAF is a result of the fact, that the dynamics within a structure, for example an able and responsible staff, is hard to make visible, when the organisation has no channels for letting the flow stream. One way of getting at the problem is to elucidate what competence actually is. I mean that an insight into the phenomenon would facilitate that the company's or organisation's potential for the activity it stands for comes into view.

In order for the staff of any kind to be competent for its tasks in a changeable work environment, it must be able to survey the situation and to produce a leading synthesis in speech, writing or actions. What I discuss in the first article and apply in the second is, in fact, the description of synthesis, as it is expressed in writing. I use texts, which are produced for education in the history of ideas, culture, and literature at the Swedish gymnasium level (corresponding to upper secondary or college).

However, I would like to strongly point out that this issue is not addressed to ordinary teachers only. My research and teaching have given me good insight into the cognitive conditions for work efforts on various kinds of organisational change , which, of course, serves as a background in this work, too. Already in 1986-87, I have studied Volvo mechanics' perception of the company's service information manuals. The study showed that mechanics in different countries want to have the information structured in different ways, depending on their conception of the conditions for doing a goodjob. A consequence for Volvo's policy was to build these differences into the material to guarantee an efficient service at the garage.

Since two years, I participate in a Swedish-Danish research project, by the name of "Human resources in the work life". My first ideas about the theme ofthese articles, I recently put forward at a conference organised by the board of the Danish Research Councils (L Bierschenk, 1999). At this occasion, representatives of the work life pointed at the importance of getting hold of the concept of competence to be able to use it efficiently. With this issue I want to give an example of the way in which an efficient goveming of an activity can be brought about by defining competence in a novel way. My idea is to change the thinking about goal directedness toward materials-directedness. I will show how the conceptual relations of a material can be made the basis for judging the effectivity of teaching, instruction, or work processes.

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Abstract

This article is a discussion of the possibility of changing the view of knowledge producing activities toward a competence directed education. After presentation of the traditional behaviouristic model and its consequences when applied on teaching, a new concept of competence is suggested, which differs from the concept of qualification. An important part of the article deals with the evaluation as an idea and a method for quality control. It is shown that evaluation of teacher effectiveness is of no use, since it functions as a means of bonding teacher and student, which is highly ineffective for measuring mental growth and indeed highly undue for use in school situations. Finally, a new system component is introduced, that is competence should be directed and regulated by the teaching material instead of being goal-directed.

Some Introductory Remarks

Today “competence development” is a concept of fashion and debate both within traditional education as well as in societal institutions and private business companies. Moreover, competence development is strictly connected to discussions of quality and quality raising, in such a way that the quality of a product is dependent on the quality in the production process. This, in its turn, is due to the quality of the person responsible for the grips, actions and strategies. Both in planning ordinary education and business development, an important task is to define which goals are the desired ones and to elaborate the strategies for reaching them. There is a special term for this, namely “goal-directedness”. Within the educational system, the subject of concern is various pedagogical methods, which are considered more or less well suited for steering toward these goals.

In this article, I discuss some premises for the internal work on job change and competence raising, which is expected to take place in the schools as well as in other educational institutions and universities before the century to come. The article will be the first in a series of studies of competence seen as the relation between the ambition of a student and the degree of difficulty (conceptual depth) of a material. My basic idea is thus “material-directedness”, for which I have built up a theoretical background (I. Bierschenk, 1997a). However, this means thinking in new directions, so some strong walls have to be destroyed along the way, especially the one called learning theory.

Foundation in the Behaviour Model

Hundred 19 years old students in one of the most reputable gymnasiums in Sweden think that Sweden is a behaviouristic society and, further, that such a society is the ideal one! (I. Bierschenk, 1998c). Our country has for decades been in the forefront as to the planning and governing of curricula and educational content as well as reforming based on researching and experimenting in and outside the classrooms. So, why haven’t Swedes gone farther than that in their mental makeup? Well, because the entire educational system is permeated by behaviouristic mentality. It means a deep and sometimes, I think, non-reflected belief that the grounds of animal psychology are applicable to education of humans. The politicians give a stimulus and get an immediate response from schools and universities of a kind that would make a Pavlov green of envy. For sure, one may admire such an effective government but it would be really great if the teachers could begin asking themselves in whose name their professional status is being questioned. By that I do not mean changes in work organisation, time schedule and salary level. I mean the demands put on professional performance, which still should be primary. Many teachers react with affect to the inability to let things alone shown by politicians in their eager to “improve quality” by introducing new methodology, new technology, and evaluations by force of both teachers and students (see e.g. the articles on the British educational system in Skolvärlden, No. 20, 1998). In Sweden, we might hesitate before certain doctrines, despite years of classroom research aiming at unity, but we may feel free to decide which methods and means are the best ones to chose in a certain situation. With the evaluation of our work it is different, however.

What Does Evaluation Research Tell Us?

An aspect of control belongs to this model, too. One instrument for quality control is the so-called evaluation of instruction, which is another fashion word. Irrespective of what we call the educational situation (schooling, competence development or labour-market actions) its task will be to create settings that are motivating for creating knew knowledge. There is a common opinion that education should not only be entertaining and pleasurable but furthermore be modern, be in pace with time, and if possible also be practised by young, fresh teachers and instructors. In this setting you could say that an evaluation instrument is used to reinforce the organisers of education. The idea is taken from the area of educational technology, which was flourishing in the United States back in the 1960's (remember programmed instruction). It has now been removed from dust by the politicians and has become their new "Sesam". I wonder: What are they up to?

Student evaluations of instruction were introduced during the 1920's at the American universities (Doyle, 1983). There are an awful lot of reports on this matter, for example variance analytic (Costin, Greenough & Menges, 1971; Marsh, 1984) and factor analytic studies (Kulik & McKeachie, 1975), but also manuals about how to evaluate educational institutions as a whole (Arreola, 1995; Braskamp & Ory, 1994; Centra, 1993). Most of the researchers in the field have come to the result, that student evaluations are the only reasonably valid method for achieving objective evaluations (Scriven, 1988). Nevertheless, they stress that many questions remain to be answered, for example the extent to which instruction effectiveness correlates with other indicators of learning (d'Apollonia & Abrami, 1997).

As is often the case of many good ideas with good intentions, they produce unintentional consequences. At least since the middle of the 1960's, studies of the validity in the evaluation of instruction have been carried out. Snyder and Clair (1976) as well as Worthington and Wong (1979) showed that the students gave positive evaluations, if they got good grades, that is, if the teacher contributed to grading leniency, a fact that invalidates evaluation as a method. In one type of experiment, in which the grades were manipulated upwards and downwards, one could show that the evaluation showed the same variation. Greenwald (1997) discusses a series of studies, which have been carried out to control the published validity experiments. Many researchers have, namely, taken a critical attitude toward the methodological approaches, although they have not been effective in empirically substantiate their criticism. One conclusion Greenwald draws is that the dependency between grading leniency and positive evaluation, which practically all studies have shown, is, in fact, desirable by the academic teachers. McKeachie (1997) means that the teachers cheat in part because they want to avoid discussing grading with their students and to become popular, in part because they want to profit from the high scores by getting higher salary and similar advantages. As everyone may realise, evaluations can then be used for oppression among colleagues and from the employers' side as well.

The most serious consequence is the politically imposed grading inflation. In Sweden, this was evident for example when the National Board of Education stated that the standard deviation should be set to 0.5 instead of 1.0 from the mean value 3 in fixing the normal distribution curve of school grades. The reason was that the five-point scale would include more students on the positive part of the scale, making Swedish students more able than would be statistically justified with respect to the population. However, this manoeuvre can be expected, because in a collective (behaviouristic) society, grading inflation is an important method for counteracting "knowledge segregation".

The consequences will be far more serious in the long run, though. British and North American schools and universities have experienced that teachers who demand that the students be productive in writing and acquire a critical thinking become low evaluation scores. Still there is a clear awareness (Greenwald & Gillmore, 1997), that high scores would very well imply low quality teaching. Further, the teachers miss the personal integrity, which is necessary to counteract the knowledge inflation that result from the grading business. Redding (1998), consequently, regards the evaluation industry as the primary reason for what he calls an academic dumbing-down. This entire development is counterproductive and unjust, especially to students with good subject knowledge, who do not get higher grades than those with less knowledge, in the name of equality (compare Benbrow & Stanley, 1996).

One example of the way the evaluation is being used with supposed quality raising purpose but with oppressing effect is given in a Swedish newspaper article (Sundewall, 1999). The head of the Institute of Science and Technology at Lund University has been interviewed concerning today's stressing educational situation and the student's demands for good instruction. The head refers to the continuous evaluations of courses and teachers that his Institute is practising:

”The first time the students' attitudes to and comments on a certain reader was put on the notice-board, it was fairly unpleasant to the people mentioned. Now, most of the teachers have been used to it and the judgements, hopefully, lead to the desired effect, that is a raise in quality.”

I can take another example of the way in which evaluation is being used as means of oppression. A group of teachers, who during the 1980's taught PhD courses in research methods at a university department, was so successful that a professor, acting head of the department, found this situation threatening. The professor thus decided to undertake an evaluation of the courses, being convinced that it would be to the disadvantage for the teachers, because they belonged to other disciplines. When this was not the outcome, it was decided that the evaluations should be discontinued. Evidently, it was not possible to manipulate the students to give negative scores to an instruction they found to be of high quality.

Considering that schools at all levels get their reputation from the quality of the teaching they offer, then evaluations by compulsion as means for quality direction may lead to a drastic decrease of interest in teaching among the teachers. In the long run, the knowledge level and the intellectual climate at the departments will decline as a result, according to Armstrong (1998). He also find it evident that the experimenting teachers' interest in various forms of exercise decreases, since the students are rating their courses lower, especially if the experiments show that the students lack certain abilities. Further, the renowned schools get their reputation from teachers who engage profoundly, which means having close connection to some field of research. Thus good teaching as only criterion is not enough for the prestigious schools to survive (Armstrong & Sperry, 1994).

I think that the problems the natural science and technical institutions have in general in attracting students to higher education has to do with the degree of connection to science at the lower levels. Newman (1998) reports on studies done in USA, where the students are constantly dissatisfied with the natural science courses. His conclusion is that the kind of education carried out within the milieu of ”the liberal arts colleges” is the best one in that it promotes discovery. Maybe this would be an idea to implement by the head of the Institute of Science and Technology in

Lund. I bet that the recruiting to higher education would be an effective barometer of quality.

A Striking Evaluation Experiment

The best possible effect of teaching, that is what the student actually learns, is reached by strict grading and effective teaching strategies (Redding, 1998). The question that remains to be answered by the researchers thus is whether the students are really able to give details about the learning effect of a course, which is the goal of any evaluation, or whether they mix it up with teaching style. What is known is that effectivity is often interpreted in terms of communicative ability, methodology and organisation, and also the construction and performance of the tests.

One of the most known evaluation experiments, which tells us most of the problems involved, is the so-called “Dr. Fox experiment” (Abrami, Leventhal, & Perry, 1982; Marsh, 1987). Its aim was to evaluate the teacher effectiveness, which is the established term. Dr. Fox was a series of videotaped lessons (performed by a professional actor) which represented three levels of teaching content and two levels of teacher expressiveness. The students looked at a lesson, evaluated the teacher effectiveness and filled in a test form, showing what they had conceived from the content, a test based on the highest content level. The result (Abrami, et al, 1982) showed, that the manipulation of expressiveness had a great effect on the entire evaluation but a small effect on the acquisition of knowledge. On the contrary, the manipulation of level of content had a great effect on the acquisition of knowledge but a small effect on the evaluation. This striking result would be enough to raze the entire evaluation industry to the ground. Because it is the degree of the art of acting in the classroom that stimulates the spectators to applauding responses in the evaluation form. Well, of course, this is also expected. The prevalent view of the way knowledge comes about, namely, follows a very primitive behaviour model. And now, let me return to animal psychology.

Teaching as Reduction of Needs

Animals have a tendency to explore their environment, since they are driven by hunger, thirst, and other basic drives. (This behaviour is sometimes termed natural curiosity.) If we take hunger, for example, we may characterise drive as follows (short from White, 1959):

(a) there is a deficit, which stimulates the nervous system
(b) the stimulation elicits an activity, which ends in a consumption response with reduction of needs as consequence
(c) reduction of needs produces learning

A similar ideological background is to be found within psychoanalysis. Freud (1949) called the human needs ‘instincts’, according to the American translation, but this is in fact a result of a mistranslation of the German term ‘Trieb’.

In the school milieu, it is assumed that the pupils have deficits in abilities, knowledge, thinking, personality, etc and therefore have a need for having them reduced. The greater deficits, the more fatiguing explorations in the world of knowledge is required to fill the gaps, and the more dangerous life do they live, because they have a low survival potential. It is from the need perspective you have to regard the marketing ideas of today’s education. Along this line of thought, the students are consumers of the school, whose task is to be marketing managers of its goods and services. From the students’ organisation of one of the gymnasiums, an offensive representative has talked about “refunding” when teachers do not fit.

I will give a concrete example of the way this model functions within the teaching of writing Swedish or any mother tongue. Teachers of writing traditionally have a tendency to correct the students' compositions as soon as they do not meet the requirements of how the teacher conceive of content, language, and style suited for the subject in question. But – first of all, no writing, at least at the gymnasium level, will be performed for its own sake but with the aim of solving a problem. If it has been formulated such that it clearly states a degree of difficulty and the students have understood it, the entire solution is as well formulated as it can be. There are students who can only produce well-formulated compositions, when they stick to the narrative level. Others are able to produce descriptive and reporting texts, because they can objectify their thinking. Thus my opinion is that traditional correction is meaningless as long as the structural relations that the teacher wants to see are not present in the cognitive sphere of his adept. If, namely, they have been present, the textual surface would have reflected them. (I would also like to say that a dyslectic student's ability to produce relations is not necessarily lower than the ability of "normal" students. Thus to judge the dyslectic's work from the surface point of view would be totally wrong.)

I can take an example from the teaching of drama at one of the gymnasiums in Lund. The teacher in question has described his methodology several times in the daily press, in the hope that people in general as well as his colleagues will know, that his students/clients become mentally more healthy through his drive-reduction model. Instead of the Freudian therapy bed he uses his lessons, where a wandering bunch of keys is acting as stimulus. Instead of consuming, his clients tell about themselves. Sad things and happy things will be absorbed by the therapy participants, who act as a nervous system with professional secrecy (!). Other teachers may also be involved in the session, if they are in the confidence of the class. This kind of dependency creating, emotionally loaded activities should not be allowed in schools.

The same idea lies behind the modern, although old, method of letting students write a diary (sometimes called log-book), in which they are expected to reflect over what they experience during one or several lessons and which the teachers comments to each one personally. Under the pretension that the teacher evaluates his teaching in interaction with the students, this way of writing creates bindings, which must be regarded objectionable in the perspective of what a relation between teacher and student really is, namely asymmetric. I do not mean that the teacher should not listen to his students' opinions in relevant matters. But I disagree with the conception that the political device of "student centeredness" means "on the student's condition", which gets an almost super-manifestation in the way in which the diary methodology is being applied. To turn the students' emotional conditions inside out, as this method in reality implies, should not be legitimised for educational use.

Education as Entertainment

The activity described as (b) above (response followed by reduction) is also called motivated behaviour. An expansion of the drive- or need-reduction model is thus called the motivation-producing model, whose theoretical basis was applied by Maslow (1954). In his model the individual is assumed to get its needs satisfied according to a hierarchic order. The satisfaction of needs of lower order is a necessary requirement for the motivation and satisfaction of needs of a higher order.

The whole debate going on about teachers' professional status focuses on the way a teachers is able to "make it interesting", which, against the theoretical frame of reference given, means to bring about motivation for learning. This kind of thinking connects to Skinner (1953) and Piaget (1952), who talk about something operative, which prepares the organism to manipulate its environment. Experiments with animals (Skinner's term ”operand conditioning”) have shown the way behaviour operates upon the environment in order to generate consequences, which then are being fed back by the sense organs and may reinforce certain behaviour, even though no organic needs are present. We recognise how little children's attention can be directed to an object that twinkles, makes sounds and moves and how the child can reinforce its pleasure by repeating this consequence by performing the operation, for example press a button. The course becomes learnt and generates new ones until the child's interest is fading away.

Is this the kind of teaching we want? For sure, it is nothing but rat trapping. However, this is not a new question. Is “edutainment” necessary? is a question posed by the last generation of teachers at the same time as they have tried to survive in the buzz of entertainment. “Since there is a shortage of attention it is tempting to try to enforce the noise curtain by means of a polished front …” says a professor and radio voice concerning today's situation for adult educators (Kurssekretariatet, Uppsala universitet, 1998, p 4). The idea of the classroom as a theatre builds on superficial sensations, because a good performance requires a lot of fuss, gestures, in short a high degree of expressiveness. Further, a modern performance is often interactive with all its ingredients of intimacy. It is not always easy to keep track of who is the leader and who is the subject of the experiment; it depends on who is pressing the button.

The strong emotional character of the discussed model of education does not foster an attitude for exploration and discovery leading to competent actions. If we want to get competent students, who are prepared for life outside school, we must avoid making our teaching methods produce bindings between teacher and student. But such a change in perspective requires a novel view on knowledge acquisition. I do not believe in a strategy that presupposes students having a natural curiosity, that they are driven to school by hunger for knowledge or thirst for learning or even by desire (Skolverket, 1998-11-20). I don't believe that students want to think of their school as a pleasure platform either. Instead they want to know what is required from them and the ways to achieve it. They are very interested in grades, too, and that is quite all right, to the extent that grades and degree of difficulty are clearly related to them.

The effectiveness of teaching must be a matter of the relation between task and degree of difficulty. The task of the teacher is to make these things clear and not to build his curriculum on a personal conception of what is interesting or useful knowledge or ask the students what they found to be fun and want to do. Especially the latter strategy does not support their preparation for the real life, where job responsibility very seldom is fun (Redding, 1998). Unfortunately, the new teaching material, which are flooding the market of education (in Sweden due to a recent reorganisation of curricula and grading system according to absolute criteria) give no guidance. They are constructed according to the author's understanding of how the educational goals can be applied into areas of study. They contain no analysis of what would be the best content, evolutionary seen, in the courses. It also seems as if the authors of textbooks take for granted, that competence is the same as intelligence (compare Piaget, 1952). For any educational subject aiming at promoting synthesis this outlook is pure destruction.

A Novel Concept of Competence

A common definition of competence is that it encompasses the abilities an individual must have to interact with his environment. To White (1959), the need is also contained in the definition (”competence motivation”). Thus it is usual that the abilities and skills, which the school are dealing with by tradition and which can be measured by means of various tests, are meant to tell something about competence. Then competence is equated with intelligence, because, originally, it was the experience that schools and teachers had about students’ abilities related to subjects, ages and cultures, which gave rise to the industry of intelligence testing. The idea is hard to kill, that students having a good re-production ability and being able to think quantitatively and linearly are competent (or ”intelligence gifted”, as they are called by a Swedish community official). This needs not be the case, but we may call them highly qualified. A competent behaviour means the ability to apprehend relationships, the structural quality of a task and to produce something characteristic (B. Bierschenk, 1995; I. Bierschenk, 1997a, b)

Theoretically and methodologically the concept of competence may be interpreted within at least three frames, a (a) epistemological, a (b) psychological, and a (c) biological frame. Within an educational context, the epistemological frame is carried by the logical order with which a subject is presented in the curricula. The psychological frame is to be found in the two model variants of teaching, which I have discussed already, one governed by motivation, the other by emotion. Both frame (a) and (b) as model regard competence as something ‘being’. The novel concept of competence, which to a very high extent is suitable for the aims of an educational system, is based on the process of ‘becoming’. The measurement of cognitive becoming connects to the time concept of natural sciences (Prigogine, 1980). A competent person/student has the ability to adjust his pattern of behaviour to many different situations. In the student’s active positioning before various tasks his cognitive structure becomes the intermediary link in his/her strategies to keep a future-oriented conduct. Exactly this is the meaning of frame (c), which may also be called system analytic.

Now, how can the invisible, that is competence, be measured? Well, a method for selection of material is required, which can measure disparity instead of diversification (I. Bierschenk, 1998b). Texts and related tasks must reflect some basic conceptual relations in such a way that the student can understand differences in level and be able to work towards a raising of level. What I see as the greatest advantage by being able to make such a selection of material, tests and tasks is the objectivity. The material becomes directive for the teaching. Studies in three different gymnasium classes (I. Bierschenk, 1998a) have shown that students, who normally do not perform well are working hard to do well on a difficult task, if they know in advance its degree of difficulty. For the teachers this kind of quality precision means that the social dependency and quasi-psychology disappears. And – who would be interested in evaluating the students’ attitudes to one’s teaching, when the measuring instrument is no longer biased?

Experience from the Floor

The operand conditioning technique (maybe more known by the term instrumental learning) has been governing the formulation of the goals of the curricula, according to the ideas of educational technology of the 1960’s. After the latest gymnasium reform in Sweden (beginning of 1990’s), it was the commission of the single schools through their groups of special subject teachers to interpret and translate the given national goals into relevant terms of student behaviour. We know that this process has led to great variability between schools, simply because the cognitive processes have been founded on content analysis, which is necessarily subjective in kind. Nevertheless, the teachers could come to a consensus because of their professional experience, which gave solidity to the formulations in the special subject documents.

My own experience from this work is that the process was formed in the shape of a sand-glass. After the narrow passage of consensus, followed the practice, which again opened up the process for a manifold of conceptions on how the plan would be put into work. As an example, I take one from the work of the Swedish subject group. In a special subject meeting sometime when the new basic course (first year studies) had been running a couple of months we summed up our experiences. A colleague did not think that the plan had any place for the history of literature. In the special subject conferences we had described the content of the goal concerning “ … reading /…/ literary texts from various times and cultures” such, that the studies may be undertaken “chronologically, epoch-based or thematically” (Spyken, ämnesgruppen för svenska, 1994). The wording “various times” and “chronologically” had the colleague interpreted in a personal way, despite an intensive collaboration in the formulation work.

I can further take an example from my teaching. A couple of years ago, I let some community politicians visit my first year class. After having listened to my lesson, they asked me which plans I had for the weeks to come. When I told them that I had planned to continue with a literary theme about myths, sagas, etc, a typically Big Brother comment came from both of them: “But you don’t begin with history of literature, do you? It’s too early!” Both my colleague’s and the visitors’ reaction is, I suppose, due to the general opinion in Sweden, that the basic gymnasium course in Swedish *must* be a motivation-producing course and, therefore, texts and tasks *must* appeal to the button-pressing activities of pleasure. (History of literature is for sure heavy as well as boring). But as long as these attitudes do not rest on a theoretical subject ground, we have to live with the personal interpretations. The very fact that all teachers are directed toward doing identical teaching in the name of concord does not clarify the subject area for the students, and to clarify conceptual relations is precisely our commission.

Toward the Renewal?

Before the millennium shift, each school has to work out suggestions for a new organisation against the background of a change in the role of the teacher, which is a consequence of a change in the view of what I earlier called knowledge production. Since the 1960’s, the psychologists trained in behaviourism have called the process “learning”. But concurrently with the winds of change blowing, the educators are beginning to see their chance and have changed learning for “teaching oneself”. According to a professor of education (Kurssekretariatet, Uppsala universitet, 1998) the shift from learning to teaching oneself means a stress on the personal responsibility for what is learnt, which would guarantee a raise in quality. In getting a grip of the self-teaching process the students decide themselves what they want to learn, how, and when, a quite new philosophy.

It is somewhat remarkable, though, that this new educational philosophy, which the politicians and school administrators are introducing in the general school system, has its roots in the prerequisites and methodology of adult education. It, in its turn, was once developed for political reasons; untrained adults should get a new chance to be educated. Sweden has a well-developed adult education and all citizens have the possibility to improve themselves in practically any subject whenever they want to. Swedes think that it is the obligation of the society to arrange for the general and necessary raising of level that is required by the ongoing development. However – is this shift of perspective away from learning to teaching oneself the most suitable form for raising the level of our compulsory and continuation school children? Not to mention the knock out mechanism that will follow, when the students do not know what they really want to study and cannot even plan for how and when. We all know, that not everybody will be born in a good mentor family and if so, this may not help, because nature itself puts limits to all progress (Husén, 1999). Perhaps we could overcome the problem that our youngsters have various dispositions in receiving instruction by changing the organisation? Well, yes, this is what Swedish school officials think. They build up self-instruction environments, called IT- rooms, whose flowing world of knowledge markets are aimed at producing needs, which the student did not know he had. Of course, behaviourism is always the same.

Let me say, however, that a student centred educational system (in the sense of "for the student's best") signalises a democratic outlook from the side of the governors and that it is far better that the learner has an influence on what, how and when. But in order to take advantage of his democratic rights, the learner must have the competence to make the necessary choices with respect to material, work methods and ways of examination within the organisation in question. Competence, which is the foundation for responsible actions has to be built up by the school, otherwise there is great risk that it becomes a breeding ground of undemocratic processes (I. Bierschenk, 1998d). If, however, school manages to find forms and instruments for the way competence can be developed, then it has made it possible for young people to contribute to civilisation after their school days. This would be more valuable to all of us than to go in for pupils' autonomy within a process they do not master. Teenage pupils are not adults and should not be exposed to the adult education policy typical of the labour market.

I recognise that the official organisers of education cannot do without some kind of instrument for quality control (or whatever you like to call it), especially not in public schools. I am not against control. I just do not find it practicable to rely on the evaluation system, the way it has functioned so far and against the background of what is known from decades of research. My opinion is that quality must in the first place be a matter of what the learner should learn, irrespective of his personal strategies. Thus my interest is to find a way of judging the learning directly, not as a process but as a result. I see no other task for a school prepared for the future.

Toward Materials-Directedness

Irrespective of which educational setting you look at, the same idea seems to lie behind the programs, namely the classical behaviouristic learning model. The spokesmen of this philosophy conceive of the individual put into this milieu as a dinner guest, whose appetite must be satisfied, and into whom the innkeeper (teacher, instructor, mentor) puts delicious pieces under free and easy forms and ceremonies. But how the body digests the meal is something that the guest as well as the innkeeper is unaware of. Sometimes the feelings afterwards are just fine, sometimes not. In the worst case, the bad effects of the meal are not immediately obvious but long-term. At certain "teach-inns", the Freudian therapy bed has to be dragged out sometimes to soften, if possible, the event of gastric reactions due to the intensity of the instruction. An instrument for controlling the digestion is the evaluation, so cherished since the 1960's. The students are given the opportunity to state their opinion, the teachers state their, the heads of the schools give their view, the politicians have their questions and forms. Still, despite innumerable statistically anchored experiments, nobody is capable of distinguishing evaluations based on teaching content and teaching style respectively. The gist of all the evaluation experiments is that if the organiser of education wants good evaluations, the learning situation must be as less exacting as possible. The teacher cheats with the course content to get high scores from the students and the students reinforce this behaviour (quite in accordance with the model) to get high grades from the teacher. Irrespective of the situation in which the model is applied within ordinary education or social life, it creates psychological bindings between the teaching and the learning part, which implies that it is not possible to control neither the quality of the process steering nor the goal in an objective way.

In a study of modern (20th century) concepts I carried out on a portion of the advanced gymnasium course in Swedish (I. Bierschenk, 1997a), it turned out that the comprehension of ideas was the same among students in natural science, social science, and aesthetic-humanistic subjects. In contrast, the concepts were differing in degree of difficulty, which could be connected to level of competence. In a series of studies to come, I will give an account of what characterises these degrees and show their application in a concrete material. I believe that a determination of the degree of difficulty in an educational material will be of utmost importance for all education and competence development. The teacher’s competence is used in the selection of a material, so that it will meet the student’s actual level and in the guiding of the student from one level to another. When conceptual relations become transparent for the learner, the risk of misses of various kinds can be avoided. Because, whom shall the learner blame, when competence is defined by the materials and not by teachers.

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